What is claimed is:

1. A method of manufacturing a semiconductor device, comprising the steps of:

(a) sequentially forming a tunnel oxide film, a first polysilicon film and a pad nitride film on a semiconductor substrate;

(b) etching portions of the pad nitride film, the first polysilicon film, the tunnel oxide film and the semiconductor substrate by means of a patterning process to form a trench within the semiconductor substrate;

(c) depositing an oxide film on the entire structure including the trench and then planarization the oxide film so that the pad nitride film is exposed;

(d) etching the pad nitride film to form an oxide film protrusion;

(e) depositing a second polysilicon film on the entire structure and then planarization the second polysilicon film so that the oxide film protrusion is exposed; and

(f) etching a part of the exposed oxide film protrusion to form a floating gate, and then forming a dielectric film and a control gate.

2. The method as claimed in claim 1, wherein the first polysilicon film is formed in thickness of 200 ~ 1000 Å using SiH_4 or Si_2H_6 and PH_3 gas by means of CVD, LPCVD, PECVD or APCVD method at a temperature of 530 ~ 680 ℃ under a pressure of 0.1 ~ 3.0torr.

3. The method as claimed in claim 1, wherein the tunnel oxide

film is deposited in thickness of 85 ~ 110 Å at a temperature of 750 ~ 800 ℃ by means of wet oxidization and is then experienced by annealing using N_2 at a temperature of 900 ~ 910 ℃ for 20 ~ 30minutes.

4. The method as claimed in claim 1, further comprising the step of before the step (a), implementing an ion implantation process to form a well within the semiconductor substrate.

5. The method as claimed in claim 1, further comprising the steps of: between the step (b) and the step (c),

implementing a sidewall oxidization process for compensating for damage of the semiconductor substrate that occurred upon formation of the trench;

implementing a rapid thermal process for making rounded the corner of the trench; and

depositing a high temperature oxide film on the entire structure along the step and then implementing a densification process at high temperature.

6. The method as claimed in claim 1, further comprising the step of between the step (d) and the step (e), implementing a wet cleaning process for preventing the tunnel oxide film from being lost, to remove the first polysilicon film in thickness of about 100 ~ 700 Å.

7. The method as claimed in claim 1, wherein the step (e)

comprises the steps of:

depositing a second polysilicon film on the entire structure;

depositing a buffer layer for reducing an top surface step of the second polysilicon film on the second polysilicon film; and

implementing a chemical mechanical polishing (CMP) process using the oxide film protrusion as a stop layer to smooth the buffer layer and the second polysilicon film.

8. The method as claimed in claim 7, wherein the buffer layer is at least one of a PE-TEOS layer, a PE-Nit layer, a PSG layer and a BPSG layer, which are formed by a PE-CVD method.

9. The method as claimed in claim 1, wherein the second polysilicon film is formed in thickness of 800 ~ 2500Å using SiH_4 or Si_2H_6 and PH_3 gas by means of a CVD, LPCVD, PECVD or APCVD method at a temperature of 530 ~ 680℃ under a pressure of 0.1 ~ 3.0torr.